

A SYSTEM AND METHOD FOR DETECTING DESIGN ERRORS IN INTEGRATED CIRCUITS

5

ABSTRACT OF THE INVENTION

The present invention is embodied in a system and method for detecting design errors, such as errors in an integrated circuit design. The present invention uses a probabilistic model, such as a Bayesian Belief Network (BBN), to detect design errors at any point in the design process 10 by using information about the current design in combination with historical design error data from previous designs. Detection of design errors in evolving or completed designs is accomplished by monitoring conditions, or patterns of conditions produced by design tasks that have historically been associated with symptoms related to design errors in previous designs. 15 The probabilistic model of the present invention is used in conjunction with fuzzy inferencing to identify and rank condition sets of the present design against historical conditions and condition sets from prior designs. Consequently, where an exact match between present and historical 20 conditions or condition sets is not identified, the inexact pattern matching afforded by inferential analysis of the conditional probabilities generated by the probabilistic model of the present invention is utilized to identify the probability that the same or similar design error exists in the present design as was identified in the prior design. In addition, the present invention identifies potential candidate errors and conditions for further investigation 25 based on proximity and similarity of preceding and succeeding tasks, conditions, and design attributes. The results of the probabilistic detection of design errors are preferably presented to the user both textually and graphically in an interactive computer program environment.

G09G 7/10
G09G 7/11
G09G 7/12
G09G 7/13
G09G 7/14
G09G 7/15
G09G 7/16
G09G 7/17
G09G 7/18
G09G 7/19
G09G 7/20
G09G 7/21
G09G 7/22
G09G 7/23
G09G 7/24
G09G 7/25
G09G 7/26
G09G 7/27
G09G 7/28
G09G 7/29
G09G 7/30
G09G 7/31
G09G 7/32
G09G 7/33
G09G 7/34
G09G 7/35
G09G 7/36
G09G 7/37
G09G 7/38
G09G 7/39
G09G 7/40
G09G 7/41
G09G 7/42
G09G 7/43
G09G 7/44
G09G 7/45
G09G 7/46
G09G 7/47
G09G 7/48
G09G 7/49
G09G 7/50
G09G 7/51
G09G 7/52
G09G 7/53
G09G 7/54
G09G 7/55
G09G 7/56
G09G 7/57
G09G 7/58
G09G 7/59
G09G 7/60
G09G 7/61
G09G 7/62
G09G 7/63
G09G 7/64
G09G 7/65
G09G 7/66
G09G 7/67
G09G 7/68
G09G 7/69
G09G 7/70
G09G 7/71
G09G 7/72
G09G 7/73
G09G 7/74
G09G 7/75
G09G 7/76
G09G 7/77
G09G 7/78
G09G 7/79
G09G 7/80
G09G 7/81
G09G 7/82
G09G 7/83
G09G 7/84
G09G 7/85
G09G 7/86
G09G 7/87
G09G 7/88
G09G 7/89
G09G 7/90
G09G 7/91
G09G 7/92
G09G 7/93
G09G 7/94
G09G 7/95
G09G 7/96
G09G 7/97
G09G 7/98
G09G 7/99
G09G 7/100
G09G 7/101
G09G 7/102
G09G 7/103
G09G 7/104
G09G 7/105
G09G 7/106
G09G 7/107
G09G 7/108
G09G 7/109
G09G 7/110
G09G 7/111
G09G 7/112
G09G 7/113
G09G 7/114
G09G 7/115
G09G 7/116
G09G 7/117
G09G 7/118
G09G 7/119
G09G 7/120
G09G 7/121
G09G 7/122
G09G 7/123
G09G 7/124
G09G 7/125
G09G 7/126
G09G 7/127
G09G 7/128
G09G 7/129
G09G 7/130
G09G 7/131
G09G 7/132
G09G 7/133
G09G 7/134
G09G 7/135
G09G 7/136
G09G 7/137
G09G 7/138
G09G 7/139
G09G 7/140
G09G 7/141
G09G 7/142
G09G 7/143
G09G 7/144
G09G 7/145
G09G 7/146
G09G 7/147
G09G 7/148
G09G 7/149
G09G 7/150
G09G 7/151
G09G 7/152
G09G 7/153
G09G 7/154
G09G 7/155
G09G 7/156
G09G 7/157
G09G 7/158
G09G 7/159
G09G 7/160
G09G 7/161
G09G 7/162
G09G 7/163
G09G 7/164
G09G 7/165
G09G 7/166
G09G 7/167
G09G 7/168
G09G 7/169
G09G 7/170
G09G 7/171
G09G 7/172
G09G 7/173
G09G 7/174
G09G 7/175
G09G 7/176
G09G 7/177
G09G 7/178
G09G 7/179
G09G 7/180
G09G 7/181
G09G 7/182
G09G 7/183
G09G 7/184
G09G 7/185
G09G 7/186
G09G 7/187
G09G 7/188
G09G 7/189
G09G 7/190
G09G 7/191
G09G 7/192
G09G 7/193
G09G 7/194
G09G 7/195
G09G 7/196
G09G 7/197
G09G 7/198
G09G 7/199
G09G 7/200
G09G 7/201
G09G 7/202
G09G 7/203
G09G 7/204
G09G 7/205
G09G 7/206
G09G 7/207
G09G 7/208
G09G 7/209
G09G 7/210
G09G 7/211
G09G 7/212
G09G 7/213
G09G 7/214
G09G 7/215
G09G 7/216
G09G 7/217
G09G 7/218
G09G 7/219
G09G 7/220
G09G 7/221
G09G 7/222
G09G 7/223
G09G 7/224
G09G 7/225
G09G 7/226
G09G 7/227
G09G 7/228
G09G 7/229
G09G 7/230
G09G 7/231
G09G 7/232
G09G 7/233
G09G 7/234
G09G 7/235
G09G 7/236
G09G 7/237
G09G 7/238
G09G 7/239
G09G 7/240
G09G 7/241
G09G 7/242
G09G 7/243
G09G 7/244
G09G 7/245
G09G 7/246
G09G 7/247
G09G 7/248
G09G 7/249
G09G 7/250
G09G 7/251
G09G 7/252
G09G 7/253
G09G 7/254
G09G 7/255
G09G 7/256
G09G 7/257
G09G 7/258
G09G 7/259
G09G 7/260
G09G 7/261
G09G 7/262
G09G 7/263
G09G 7/264
G09G 7/265
G09G 7/266
G09G 7/267
G09G 7/268
G09G 7/269
G09G 7/270
G09G 7/271
G09G 7/272
G09G 7/273
G09G 7/274
G09G 7/275
G09G 7/276
G09G 7/277
G09G 7/278
G09G 7/279
G09G 7/280
G09G 7/281
G09G 7/282
G09G 7/283
G09G 7/284
G09G 7/285
G09G 7/286
G09G 7/287
G09G 7/288
G09G 7/289
G09G 7/290
G09G 7/291
G09G 7/292
G09G 7/293
G09G 7/294
G09G 7/295
G09G 7/296
G09G 7/297
G09G 7/298
G09G 7/299
G09G 7/300
G09G 7/301
G09G 7/302
G09G 7/303
G09G 7/304
G09G 7/305
G09G 7/306
G09G 7/307
G09G 7/308
G09G 7/309
G09G 7/310
G09G 7/311
G09G 7/312
G09G 7/313
G09G 7/314
G09G 7/315
G09G 7/316
G09G 7/317
G09G 7/318
G09G 7/319
G09G 7/320
G09G 7/321
G09G 7/322
G09G 7/323
G09G 7/324
G09G 7/325
G09G 7/326
G09G 7/327
G09G 7/328
G09G 7/329
G09G 7/330
G09G 7/331
G09G 7/332
G09G 7/333
G09G 7/334
G09G 7/335
G09G 7/336
G09G 7/337
G09G 7/338
G09G 7/339
G09G 7/340
G09G 7/341
G09G 7/342
G09G 7/343
G09G 7/344
G09G 7/345
G09G 7/346
G09G 7/347
G09G 7/348
G09G 7/349
G09G 7/350
G09G 7/351
G09G 7/352
G09G 7/353
G09G 7/354
G09G 7/355
G09G 7/356
G09G 7/357
G09G 7/358
G09G 7/359
G09G 7/360
G09G 7/361
G09G 7/362
G09G 7/363
G09G 7/364
G09G 7/365
G09G 7/366
G09G 7/367
G09G 7/368
G09G 7/369
G09G 7/370
G09G 7/371
G09G 7/372
G09G 7/373
G09G 7/374
G09G 7/375
G09G 7/376
G09G 7/377
G09G 7/378
G09G 7/379
G09G 7/380
G09G 7/381
G09G 7/382
G09G 7/383
G09G 7/384
G09G 7/385
G09G 7/386
G09G 7/387
G09G 7/388
G09G 7/389
G09G 7/390
G09G 7/391
G09G 7/392
G09G 7/393
G09G 7/394
G09G 7/395
G09G 7/396
G09G 7/397
G09G 7/398
G09G 7/399
G09G 7/400
G09G 7/401
G09G 7/402
G09G 7/403
G09G 7/404
G09G 7/405
G09G 7/406
G09G 7/407
G09G 7/408
G09G 7/409
G09G 7/410
G09G 7/411
G09G 7/412
G09G 7/413
G09G 7/414
G09G 7/415
G09G 7/416
G09G 7/417
G09G 7/418
G09G 7/419
G09G 7/420
G09G 7/421
G09G 7/422
G09G 7/423
G09G 7/424
G09G 7/425
G09G 7/426
G09G 7/427
G09G 7/428
G09G 7/429
G09G 7/430
G09G 7/431
G09G 7/432
G09G 7/433
G09G 7/434
G09G 7/435
G09G 7/436
G09G 7/437
G09G 7/438
G09G 7/439
G09G 7/440
G09G 7/441
G09G 7/442
G09G 7/443
G09G 7/444
G09G 7/445
G09G 7/446
G09G 7/447
G09G 7/448
G09G 7/449
G09G 7/450
G09G 7/451
G09G 7/452
G09G 7/453
G09G 7/454
G09G 7/455
G09G 7/456
G09G 7/457
G09G 7/458
G09G 7/459
G09G 7/460
G09G 7/461
G09G 7/462
G09G 7/463
G09G 7/464
G09G 7/465
G09G 7/466
G09G 7/467
G09G 7/468
G09G 7/469
G09G 7/470
G09G 7/471
G09G 7/472
G09G 7/473
G09G 7/474
G09G 7/475
G09G 7/476
G09G 7/477
G09G 7/478
G09G 7/479
G09G 7/480
G09G 7/481
G09G 7/482
G09G 7/483
G09G 7/484
G09G 7/485
G09G 7/486
G09G 7/487
G09G 7/488
G09G 7/489
G09G 7/490
G09G 7/491
G09G 7/492
G09G 7/493
G09G 7/494
G09G 7/495
G09G 7/496
G09G 7/497
G09G 7/498
G09G 7/499
G09G 7/500
G09G 7/501
G09G 7/502
G09G 7/503
G09G 7/504
G09G 7/505
G09G 7/506
G09G 7/507
G09G 7/508
G09G 7/509
G09G 7/510
G09G 7/511
G09G 7/512
G09G 7/513
G09G 7/514
G09G 7/515
G09G 7/516
G09G 7/517
G09G 7/518
G09G 7/519
G09G 7/520
G09G 7/521
G09G 7/522
G09G 7/523
G09G 7/524
G09G 7/525
G09G 7/526
G09G 7/527
G09G 7/528
G09G 7/529
G09G 7/530
G09G 7/531
G09G 7/532
G09G 7/533
G09G 7/534
G09G 7/535
G09G 7/536
G09G 7/537
G09G 7/538
G09G 7/539
G09G 7/540
G09G 7/541
G09G 7/542
G09G 7/543
G09G 7/544
G09G 7/545
G09G 7/546
G09G 7/547
G09G 7/548
G09G 7/549
G09G 7/550
G09G 7/551
G09G 7/552
G09G 7/553
G09G 7/554
G09G 7/555
G09G 7/556
G09G 7/557
G09G 7/558
G09G 7/559
G09G 7/560
G09G 7/561
G09G 7/562
G09G 7/563
G09G 7/564
G09G 7/565
G09G 7/566
G09G 7/567
G09G 7/568
G09G 7/569
G09G 7/570
G09G 7/571
G09G 7/572
G09G 7/573
G09G 7/574
G09G 7/575
G09G 7/576
G09G 7/577
G09G 7/578
G09G 7/579
G09G 7/580
G09G 7/581
G09G 7/582
G09G 7/583
G09G 7/584
G09G 7/585
G09G 7/586
G09G 7/587
G09G 7/588
G09G 7/589
G09G 7/590
G09G 7/591
G09G 7/592
G09G 7/593
G09G 7/594
G09G 7/595
G09G 7/596
G09G 7/597
G09G 7/598
G09G 7/599
G09G 7/600
G09G 7/601
G09G 7/602
G09G 7/603
G09G 7/604
G09G 7/605
G09G 7/606
G09G 7/607
G09G 7/608
G09G 7/609
G09G 7/610
G09G 7/611
G09G 7/612
G09G 7/613
G09G 7/614
G09G 7/615
G09G 7/616
G09G 7/617
G09G 7/618
G09G 7/619
G09G 7/620
G09G 7/621
G09G 7/622
G09G 7/623
G09G 7/624
G09G 7/625
G09G 7/626
G09G 7/627
G09G 7/628
G09G 7/629
G09G 7/630
G09G 7/631
G09G 7/632
G09G 7/633
G09G 7/634
G09G 7/635
G09G 7/636
G09G 7/637
G09G 7/638
G09G 7/639
G09G 7/640
G09G 7/641
G09G 7/642
G09G 7/643
G09G 7/644
G09G 7/645
G09G 7/646
G09G 7/647
G09G 7/648
G09G 7/649
G09G 7/650
G09G 7/651
G09G 7/652
G09G 7/653
G09G 7/654
G09G 7/655
G09G 7/656
G09G 7/657
G09G 7/658
G09G 7/659
G09G 7/660
G09G 7/661
G09G 7/662
G09G 7/663
G09G 7/664
G09G 7/665
G09G 7/666
G09G 7/667
G09G 7/668
G09G 7/669
G09G 7/670
G09G 7/671
G09G 7/672
G09G 7/673
G09G 7/674
G09G 7/675
G09G 7/676
G09G 7/677
G09G 7/678
G09G 7/679
G09G 7/680
G09G 7/681
G09G 7/682
G09G 7/683
G09G 7/684
G09G 7/685
G09G 7/686
G09G 7/687
G09G 7/688
G09G 7/689
G09G 7/690
G09G 7/691
G09G 7/692
G09G 7/693
G09G 7/694
G09G 7/695
G09G 7/696
G09G 7/697
G09G 7/698
G09G 7/699
G09G 7/700
G09G 7/701
G09G 7/702
G09G 7/703
G09G 7/704
G09G 7/705
G09G 7/706
G09G 7/707
G09G 7/708
G09G 7/709
G09G 7/710
G09G 7/711
G09G 7/712
G09G 7/713
G09G 7/714
G09G 7/715
G09G 7/716
G09G 7/717
G09G 7/718
G09G 7/719
G09G 7/720
G09G 7/721
G09G 7/722
G09G 7/723
G09G 7/724
G09G 7/725
G09G 7/726
G09G 7/727
G09G 7/728
G09G 7/729
G09G 7/730
G09G 7/731
G09G 7/732
G09G 7/733
G09G 7/734
G09G 7/735
G09G 7/736
G09G 7/737
G09G 7/738
G09G 7/739
G09G 7/740
G09G 7/741
G09G 7/742
G09G 7/743
G09G 7/744
G09G 7/745
G09G 7/746
G09G 7/747
G09G 7/748
G09G 7/749
G09G 7/750
G09G 7/751
G09G 7/752
G09G 7/753
G09G 7/754
G09G 7/755
G09G 7/756
G09G 7/757
G09G 7/758
G09G 7/759
G09G 7/760
G09G 7/761
G09G 7/762
G09G 7/763
G09G 7/764
G09G 7/765
G09G 7/766
G09G 7/767
G09G 7/768
G09G 7/769
G09G 7/770
G09G 7/771
G09G 7/772
G09G 7/773
G09G 7/774
G09G 7/775
G09G 7/776
G09G 7/777
G09G 7/778
G09G 7/779
G09G 7/780
G09G 7/781
G09G 7/782
G09G 7/783
G09G 7/784
G09G 7/785
G09G 7/786
G09G 7/787
G09G 7/788
G09G 7/789
G09G 7/790
G09G 7/791
G09G 7/792
G09G 7/793
G09G 7/794
G09G 7/795
G09G 7/796
G09G 7/797
G09G 7/798
G09G 7/799
G09G 7/800
G09G 7/801
G09G 7/802
G09G 7/803
G09G 7/804
G09G 7/805
G09G 7/806
G09G 7/807
G09G 7/808
G09G 7/809
G09G 7/810
G09G 7/811
G09G 7/812
G09G 7/813
G09G 7/814
G09G 7/815
G09G 7/816
G09G 7/817
G09G 7/818
G09G 7/819
G09G 7/820
G09G 7/821
G09G 7/822
G09G 7/823
G09G 7/824
G09G 7/825
G09G 7/826
G09G 7/827
G09G 7/828
G09G 7/829
G09G 7/830
G09G 7/831
G09G 7/832
G09G 7/833
G09G 7/834
G09G 7/835
G09G 7/836
G09G 7/837
G09G 7/838
G09G 7/839
G09G 7/840
G09G 7/841
G09G 7/842
G09G 7/843
G09G 7/844
G09G 7/845
G09G 7/846
G09G 7/847
G09G 7/848
G09G 7/849
G09G 7/850
G09G 7/851
G09G 7/852
G09G 7/853
G09G 7/854
G09G 7/855
G09G 7/856
G09G 7/857
G09G 7/858
G09G 7/859
G09G 7/860
G09G 7/861
G09G 7/862
G09G 7/863
G09G 7/864
G09G 7/865
G09G 7/866
G09G 7/867
G09G 7/868
G09G 7/869
G09G 7/870
G09G 7/871
G09G 7/872
G09G 7/873
G09G 7/874
G09G 7/875
G09G 7/876
G09G 7/877
G09G 7/878
G09G 7/879
G09G 7/880
G09G 7/881
G09G 7/882
G09G 7/883
G09G 7/884
G09G 7/885
G09G 7/886
G09G 7/887
G09G 7/888
G09G 7/889
G09G 7/890
G09G 7/891
G09G 7/892
G09G 7/893
G09G 7/894
G09G 7/895
G09G 7/896
G09G 7/897
G09G 7/898
G09G 7/899
G09G 7/900
G09G 7/901
G09G 7/902
G09G 7/903
G09G 7/904
G09G 7/905
G09G 7/906
G09G 7/907
G09G 7/908
G09G 7/909
G09G 7/910
G09G 7/911
G09G 7/912
G09G 7/913
G09G 7/914
G09G 7/915
G09G 7/916
G09G 7/917
G09G 7/918
G09G 7/919
G09G 7/920
G09G